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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/073,854	02/14/2002	Keitaro Aoshima	003510-119	6325

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EXAMINER

HAMILTON, CYNTHIA

ART UNIT	PAPER NUMBER
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1752

DATE MAILED: 05/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/073,854

Applicant(s)

AOSHIMA ET AL.

Examiner

Cynthia Hamilton

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 2/14/02, 04/01/02, 7/30/02.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2, 6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claim language of claim 1 leaves unclear what is being claimed in instant claims 1-19. Is it (i) a photopolymerizable composition that is capable of being cured by some kind of exposure, (ii) a composition that has been cured by some kind of exposure that is still photopolymerizable and still contains (A), (B) and (C), (iii) a process of curing a photopolymerizable composition because of the language "that is cured" being construed to be a process step, or (iv) a product by process claim wherein what is really claimed is the cured product of the photopolymerizable compositions set forth? Since claims 2-19 are dependent upon the "photopolymerizable composition of claim 1" then for examination purposes the examiner searched and examined the photopolymerizable composition that was capable of being cured to some kind of exposure as referenced in applicants "Field of the Invention" on page 1 of their specification. Claims 6, 8 and 9 have been treated as "capable of" limitations on the photopolymerizable composition claimed. Claims 18-19 are also confusing because reference is made to compounds "generating heat" and not "capable of generating heat". Is this again a process step or a reference to properties held by the compound described? The examiner notes that applicants need to limit each claim to one class of invention as defined in 35 USC 101. 35 U.S.C. 101 reads as follows:

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Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Thus applicants need to write claims to a process or a composition of matter or a product of manufacture. The mixing of a process, composition and product of manufacture all into one claim is confusing. The examiner also notes that claims presented to other statutory classes of invention may be subject to restriction at the time of presentation. The examiner suggests applicants consider such language as found in their Field of the Invention, e.g. "a photopolymerizable composition which can be cured by exposure to". The "can be" refers to future manipulation and not current activity as is found in claim 1 with "that is cured".

3. Claim 4 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. What is 100% in claim 4? What is meant by "as a solid component" in claim 4 when referencing (A) which is solid at 25 degrees C, i.e. standard room temperature reference? The examiner is unsure if a further limit is set by this "as a solid component" or it is merely a redundant phrase. Is this a reference to some method of mixing wherein (A) is not melted or solvated before introduction into the photopolymerizable composition? As to the 100% of claim 4, the examiner suggests applicants use language like that found in claim 17.

4. Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. What is meant by "benzyl" is unclear because the radical polymerization initiator in claim 7 is a compound while "benzyl" is a the univalent radical $C_6H_5CH_2\cdot$ derived from toluene as set forth by The American Heritage Dictionary of the English Language and Registry.

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Perhaps what was meant here was "benzil" as listed in Kirk-Othmer Encyclopedia of Chemical Technology as a photoinitiators working by electron transfer.

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-6, 15, and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Akamatsu et al (3,839,171) as optionally evidenced by Walls et al (4,772,538). Example 36 of Akamatsu et al anticipates the instant compositions of claims 1-6, 15 and 17 wherein n-cyclohexylacrylamide is the solid polymerizable instant (A) as also cited by applicants, The unsaturated polyester of Akamatsu et al is instant (C) binder polymer with an average molecular weight of 25, 000 and inherently having a number average molecular weight of 2,00 to 250,000 and a degree of polydispersion below 10. In Akamatsu et al, benzoin is the radical polymerization initiator with a maximum absorption no greater than 400 nm as evidenced by Walls et al in col. 7, lines 53-60, stating benzoin has a maximum absorption of about 320 to about 400 nm.

7. Claims 1-2, 4-12, 16-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Kausch (4,476,215) as evidenced by SR-296 product bulletin. The examples of Kausch wherein pentaerythritol tetraacrylate is present anticipate the instant compositions of claims 1-12 and 16-17 as evidenced by the product bulletin for SR-295 which is a tradename for pentaerythritol tetraacrylate disclosed as having a Tg degrees centigrade of 103 anticipate the

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instant compositions. Tg is an art recognized abbreviation of glass transition temperature. With respect to the use of IR lasers and others used an intended use of curing the instant compositions, the examiner holds that the compositions of Kausch inherently have this ability or could be further adapted to have this ability. Thus, the compositions of Kausch anticipate the instant composition. Instant claims 8-12 and 16-17 do not require that the composition have any specific properties with respect to the sources of exposure set forth. If processes are intended then applicants should present claims so clearly stating. However, such claims would be subject to consideration of restriction requirements.

8. Claims 1-2, 4-6, 9-10, 13, 17-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Hauck et al (WO 00/48836) as evidenced by SR-399, product bulletin. With respect to instant claims 1-2, 4-6, 9-10, 13 and 17-19, Example 1 along with others such as Examples 9-10 of Hauck et al anticipates the instant compositions wherein dipentaerythritol pentaacrylate is a solid ethylenically unsaturated material with a Tg, e.g. glass transition temperature, of 90 degrees C as evidenced by SR-399, product bulletin. In Hauck et al, also see particularly the abstract, pages 4-13 and claims.

9. Claims 1-10, 13, 15-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Hauck et al (WO 00/48836)

10. Claims 1-2, 4-6, 8-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Baumann et al (EP 0 684 522 A1) as evidenced by SR-399, product bulletin. With respect to instant claims 1-2, 4-6, 8-17, all the Examples of Baumann et al anticipate the instant compositions wherein dipentaerythritol pentaacrylate is a solid ethylenically unsaturated material

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with a T_g, e.g. glass transition temperature, of 90 degrees C as evidenced by SR-399, product bulletin.

11. Claims 1, 14, 16-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Daicel Chem Ind LTD (JP 01-161442). The photopolymerizing compositions wherein solid additionally polymerizing compounds are chosen from two choices, i.e. solid or liquid, in Daicel anticipate the instant compositions because solid at normal temperature is held to reflect standard temperature which is 25 degrees C. The resistance of cold flow by Daicel is the same reasons set forth by applicants when they refer to plastic flow on page 4 of the instant specification.

12. Claims 1-6, 13-14, 16-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Imai et al (5,080,999). With respect to instant claims 1-6, 13-14 and 16-17, Examples 3 and 6 of Imai et al anticipate the instant photopolymerizable compositions wherein applicants disclose tri(acryloyloxyethyl)isocyanurate has a melting point of 52-54 degrees C as set forth on instant page 35 of their application.

13. Claims 1-4, 13 and 17-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Grunwald et al (5,641,608) as evidenced by SR-368 product bulletin and Product Data Scripset 550 and Luders et al (3,725,356). Example 9 of Grunwald et al anticipates the instant compositions of claims 1-4, 13 and 17-19 wherein SR368 is the instant (A) solid with a melt point of 52-54 degrees C, Scripset 550 is the binder with a weight average molecular weight of 105,000 as evidenced by Product Data and lauroyl peroxide is the radical polymerization initiator as evidenced by Luders et al in col. 3, lines 44-55 with I.R. absorbing dye project 860 NP is the heat generating compound.

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14. Claims 1-6, 13, 15-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Miyagawa et al (4,952,478) as evidenced by Yamasita et al (5,246,816), Ciba Irgacure 184, and SR-368 product bulletin. With respect to instant claims 1-6, 13 and 15-17, the compositions in Table 15 and 16 of Miyagawa et al anticipate the instant compositions wherein Aronix m 315 as evidenced by Yamasita et al in Example 2 naming it as tris (acryloxyloxymethyl)isocyanurate and SR 368 product bulletin which identifies this compound as having a Tg of 272 and melting point of 52-54 degrees C is the instant (A) and Ciba disclosed IRGACURE 184 as having an absorption above 400 nm wavelength.

15. Claims 1-6, 8, and 13-17 rejected under 35 U.S.C. 103(a) as being unpatentable over Koike et al (4,950,581) in view of Faust (4,019,972). Koike et al disclose compositions like those of instant claims 1-6, 8, and 13-17 with the exception that it is not required that a solid monomer be selected from the group set forth in col. 3 however, there are such monomers in the list and the choice of solid or liquid is known in the art as taught by Faust in col. 1 with the concomitant problems of crystallinity in the photopolymer layer but added improvement of reducing cold flow. Thus, with respect to instant claims 1-6, 8, and 13-17, the use of either solid or liquid monomers in the Koike et al photopolymerizable composition would have been prima facie obvious to obtain a stable solid printing plate material as required. In Koike et al, see the examples.

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. SR492 product bulletin and CD-501 product bulletin are cited to show that propoxylated trimethylolpropane triacrylates are liquid at 25 degrees C and indicate that the monomer in the examples of EP 0377321 would also be liquid.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Primary Examiner Cynthia Hamilton whose telephone number is (703) 308-3626. The examiner can normally be reached on Monday-Friday, 9:30 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Janet Baxter can be reached on (703) 308-2303. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application should be directed to the 1700 receptionist whose telephone number is (703) 308-0661.

Cynthia Hamilton
May 17, 2003



**CYNTHIA HAMILTON
PRIMARY EXAMINER**